Bridge Scoring, Strategies, and Tactics

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The game of Contract Bridge has two basic methods of scoring: rubber bridge scoring and duplicate bridge scoring. In either form, the contract is bid in the number of tricks (one to seven) in excess of six tricks, called "book". For example, a bid of 1♡ proposes to take at least 6 + 1 = 7 tricks.

Rubber bridge came first, and its scoring is more complicated: the scoring on one hand depends on what happened on previous hands. In ***duplicate bridge***, the score on any hand is independent of others. This scoring is simpler to present, so I'll start there.

Duplicate Bridge Scoring

Duplicate scoring is often reduced to a table of results. You look up the contract, vulnerability and result, and then read off the score. However, such tables are produced by calculating from the rules. You should be able to calculate the possible scores during play, to choose your correct action.

Contracts Made

Contract bid and made	First trick	Subsequent tricks
Minor suit (♣ or ♢)	20	20
Major suit (♡ or ♠)	30	30
No Trump	40	30
Doubled	Double the above	
Redoubled	Quadruple the above	

Contract Bonus (one per contract)	Not Vul.	Vulnerable
Game (100 points) bid and made	300	500
Part score (any lesser contract) bid and made	50	50

Other bonuses	Not Vul.	Vulnerable
Overtrick, undoubled	Trick score	
Overtrick, doubled	100	200
Overtrick, redoubled	200	400
Making a doubled contract (insult)	50	50
Making a redoubled contract (insult)	100	100
Small slam (12 tricks) bid and made	500	750
Grand slam (all 13 tricks) bid and made	1,000	1,500

Contracts Defeated

Undertricks	Not Vulnerable			Vulnerable		
	Undoubled	Doubled	Redoubled	Undoubled	Doubled	Redoubled
First	50	100	200	100	200	400
Second & third	50	200	400	100	300	600
Subsequent	50	300	600	100	300	600

Players often tick off the penalties for doubled vulnerable undertricks in hundreds, as “2, 5, 8, 11, …” Similarly, it’s “1, 3, 5, 8, 11, …” for down doubled not vulnerable.

In duplicate bridge, the deal rotates clockwise, so that North deals boards 1, 5, 9, and 13; East deals boards boards 2, 6, 10, 14, etc. The vulnerability is assigned across all possible combinations of dealers, which takes 16 boards. It then starts over, so that boards 17-32 are identical to corresponding boards numbered 1-16. Higher numbered boards, if used, continue the same pattern.

Duplicate Scoring Examples	Scores	Total
1NT undoubled, making 2 (any vul)	40 (1st NT) + 50 (part score) + 30 (overtrick)	120
2♡ doubled (into game), vulnerable, making 3	120 (tricks) + 500 (vul. game) + 200 (overtrick) + 50 (insult)	870
5♢ doubled, not vulnerable, down 4	100 (1st) + 400 (2nd & 3rd) + 300 (4th)	-800

Duplicate scoring may be used in a single table game, but rubber or four deal bridge is common.

Rubber Bridge Scoring

Rubber bridge scores are the same as for duplicate bridge, except that the “Contract Bonus” is replaced by a more complex scheme. The major unit of play is a “rubber”, in which play continues until one side has won two “games”. Both sides start the rubber “not vulnerable”. Unlike in duplicate bridge, score for a part score bid and made is carried over to subsequent hands, so it is not required to bid a game all at once to get credit for making one. A side that makes game becomes “vulnerable”, and any previous part score for the other side no longer counts toward the next game.

Rubber Bridge Bonuses	
Winning rubber (two games of three)	500
Winning rubber (two games of two)	700
Making game in an unfinished rubber	300
Active part score in an unfinished rubber	50
Four trump honors in one hand	100
Five trump honors in one hand	150
All four aces in one hand at no trump	150

Rubber scoring is done on a sheet with a tall “+” having more space at the top. Points for contracts bid and made are scored below the horizontal line, and all other scores are above the line. When a game is made, a line is drawn below all scores below the line, signifying the start of a new game or the end of the rubber. When the rubber is over, all points scored are tallied, so it is quite possible to win the rubber bonus, but lose overall.

Because a rubber can go on “forever”, many players instead prefer ***four deal bridge***. In this format, the major unit of play is four deals, called a chukker, with each player dealing once in rotation, and a passed out hand being re-dealt. However, vulnerability is assigned, not earned: on the first hand, nobody is vulnerable, and on the fourth hand, both sides are vulnerable. In the earlier, Chicago variant, the dealer is vulnerable on the second and third hands. In the Cavendish variant, the non-dealing side is vulnerable on the second and third deals. The latter, summarized “None – ND – ND – Both”, makes for a more lively game, since the dealer will have favorable vulnerability for pre-empting on the middle hands.

In four deal bridge, part scores are often carried forward as in rubber bridge, but game bonuses are 300 (not vulnerable) or 500 (vulnerable) as in duplicate scoring. There are no rubber bonuses, but honors do count. The only part score bonus is 100, on the fourth deal only. Duplicate scoring may also be used.

The American Contract Bridge League (ACBL) describes four deal bridge in detail, including scoring mechanics, at http://web2.acbl.org/laws/rlaws/lawofcontractbridgecombined_2004.pdf, pp. 58-61.

Final Scoring

The scores we have learned about so far are often used as the basis for one of several layered methods of scoring:

Total points: When a single table is in play, independent of other tables, the scores are usually tallied without conversion. (When playing for stakes, the totals for a rubber are often rounded to the nearest 100, to make settling up easier.) With total points scoring, slams have a huge value, and games are important, but part scores are important only as a step toward game. In some total points games, by mutual agreement, undoubled part scores are simply conceded as made, and play moves on to the next hand.

Matchpoints: Comparison scoring is mostly used in pair games. All pairs playing a board in the same direction are compared against each other. A pair gets one point for each pair they outscore, and half a point for a tie. So, if a board is played 13 times, the top score is 12 matchpoints, and 6 is average. Match point scoring may be used in team events, called ***board-a-match***, where only one point is at stake on a board (but only 24 or so in the event), a form of play that highly favors stronger teams. Matchpoint scoring makes every deal have the same value: part score, game or slam.

International Match Points (IMPs): The IMP scale is mostly used in team-of-four games. Each team sits North-South at one table, and East-West at the other. After all boards have been played at both tables, the teams compare results. For example, if one side bids and makes 4♡, not vulnerable, at one table, they get 420. If they set the same contract one at the other table, they get 50 there. The total of 470 points is converted to 10 IMPS using a table printed inside the convention card. IMPS may also be used in pair events, where IMPs for each pair can be calculated against each other pair (usually by computer), against the median score, or against some other datum. While the IMP scale was designed for comparisons, it can also be used in a single table game. The purpose of IMPS is to make part scores more important and slams less important, a compromise between total points and matchpoints.

Total IMPs: The number of IMPS won and lost can be totaled and used for the final result of an IMPs event. This is commonly done for IMP pair events, but seldom for team events. It puts a high a premium on winning matches by as much as possible.

Matches: Results of a round robin or Swiss match can be converted to count matches won, or half a match for a tie. This is commonly used with a "winning tie" (¾ match) for a 1 or 2 IMP win, and a "losing tie" (¼ match). Scoring by matches does not differentiate well between teams with similar records, and is seldom used any more.

Victory Points: Victory point scales are used in round robin or Swiss team events with IMP scoring. The net total IMP result for a match is converted to victory points using a scale printed inside the convention card. In North America, the original victory point scale was the 20-point scale. It flattens out the scoring, extending the idea of the winning and losing tie. Unfortunately, it's too flat. In any large Swiss team event scored on the 20-point scale, there will be teams outscoring other teams that won more matches – sometimes this affects winning the event overall. The 30-point scale was developed as a compromise between the 20-point scale and scoring by matches. It puts a premium on winning matches, which seems most important, but also differentiates between teams with similar won-lost records. The 30-point scale was rapidly adopted in the western U.S., but the backward east, including our club, still tends to use the 20-point scale. (Swiss team results have already been partially randomized by pairing teams with similar records to play each round, penalizing a team for a good result by giving them a strong opponent. Teams that do poorly are rewarded with weak opponents, the "Swiss gambit".)

Strategies

Total points and IMPs

Any single hand, such as a slam or major penalty, at total points or IMPS could determine the final result of the match or rubber.

- The main strategy at total points or IMPs is to make your contract and to set the opponents. An overtrick never counts as much as making your contract, and is often tiny compared to that score.
- Be conservative overcalling at the 2- and 3-level, especially vulnerable, to avoid a disaster.
- Double a part score (into game) only when you expect it to go down two or more tricks. If you miscalculated, down only one will be a disappointment – but not the whole match, as it could be, if they make it.
- Consider a cheap sacrifice as insurance – that is, even when you think you may be able to set their game or slam – especially at total points.
- Bid a non-vulnerable game at IMPs when you think it is at least 50% likely to make.
- Bid a vulnerable game if it is 40% or better, because the reward for making is greater. Again, bid more aggressively at total points. As a practical matter, at IMPS or total points:
    - ***Strain to invite a vulnerable game, but accept the invitation normally***. If both partner stretch, you will get to some hopeless contracts.
    - As a corollary, don't invite with a solid invitation, just bid the game yourself.
- Bid a slam at any vulnerability when you think it is at least 50% likely to make.
- If you agree to concede part scores, it is important to contest a part score as high as you still have a chance of making.

Matchpoints

Matchpoints is a game of frequency; a bad result is only one board, with 23 or more other boards equally important.

- The main strategy at matchpoints is to score higher than as many opponents as possible, even by 10 points. In normal contracts, you need to optimize the number of tricks you take, possibly risking the contract when the odds favor gaining a trick.
- Frisky bidding, especially when not vulnerable, is the order of the day. The primary idea is to get in there on weak hands with distribution, mess up the bidding for the opponents, and get out.
- On the other hand, doubling a vulnerable part score (into game) is common, because down 1 doubled vulnerable (+200) beats all part score results.
- Sacrificing is important at matchpoints, but can be riskier than at IMPs or total points. A sacrifice at matchpoints is a parlay – for it to produce a good result, all three of these must occur:
    1. the opponents must be able to make their contract,
    2. the field must be in that contract, and
    3. the sacrifice must not go down more than the value of their contract.

  Kit Woolsey recommends sacrificing only if you are 100% sure of two of these three conditions, being a little more aggressive if the save might make.
- Bid your games when you think they are at least 50% likely to make.
- When you expect everybody else to at least bid game, bid a slam when you think it is at least 50% likely to make. However, be conservative if you think some pairs will not reach game.
- Vulnerability is generally not an issue in game or slam decisions.

Tactics

Partner opens 1♡ and you hold:

♠ 8 7 3

♡ Q 10 4 2

◊ A J 10

♣ A 6 2

1. ***What do you bid?*** **– see "Bidding Games and Slams" below**

Suppose partner raises your 1♡ opening to 3♡, and you hold:

♠ Q J 6

♡ A K 7 6 2

◊ 8 3

♣ K 5 3

2. ***What do you bid?*** **– see "Bidding Games and Slams" below**

Against your heart contract, the opponents take the two top spades and shift to a club. You win and draw trumps, which prove to be 2-2. You lead a diamond from hand and insert the 10, which loses to the King. A club comes back, and you win in hand. With six tricks left:

Dummy	*Declarer*
♠ 9	♠ Q
♡ 10 4	♡ A 7 6
◊ A J	◊ 8
♣ 8	♣ 3

You have nine tricks in the bag. If you take a second finesse in diamonds and it wins, you can discard a club and take ten tricks. However, if the finesse loses, they may cash a club and hold you to eight tricks.

3. ***Do you finesse again in diamonds?*** **– see "Declaring Contracts" below**

Bidding Games and Slams

In most situations, responder's ♠873 ♡Q1042 ◊AJ10 ♣A62 is a middling "limit raise" game invitation: excellent aces outside, two trump honors, and the possibilities of the ◊AJ10 are offset by the sterile 4-3-3-3 distribution. So most of the time, responder should make the normal bid of 3♡ over 1♡.

However, vulnerable at total points, and probably at IMPs, you should drive to game, rather than inviting. The weaker ♠873 ♡Q1042 ◊AJ10 ♣Q102 becomes a limit raise. (If you disagree, improve either hand to ♠1073.)

Holding ♠QJ6 ♡AK762 ◊83 ♣K53, opener should ***always pass***. *Responder has already taken the vulnerability into account as part of the invitation.* Opener's hand is a middling 13 count, only one point above minimum.

To make 4♡ on ♠QJ6 ♡AK762 ◊83 ♣K53 opposite ♠873 ♡Q1042 ◊AJ10 ♣A62, you need all three of these events to occur:

1. The hearts split 3-1, or 4-0 onside, about a 98% chance, and

2. The diamond suit produces two tricks, with one or two finesses, a 75% chance, and
3. You can win a spade trick, about 60%. (4-3 spades is 62%, they will find a spade ruff maybe half of the other 38%, say 81% total - but 25% of the time, the AK will be behind the QJ.)

The total chance of making game would be 44% (.98 x .75 x .60).

You may want to skim the remainder of this section, at least for now, resuming with "Declaring Contracts", as much of the following material is more technical.

Let's do some analysis of the situation in general. Suppose your choice is between 3♡ and 4♡, and you expect to take nine or ten tricks, undoubled. The main approach here, suggested by Kit Woolsey, is to calculate the ***cost of being wrong***, and then use it to decide what to do.

Total Points: These results are possible, using duplicate scoring at total points:

Bid Game?	Not Vulnerable			Vulnerable		
Tricks available	9	10	Cost of being wrong	9	10	Cost of being wrong
Pass 3♡	+140	+170	250	+140	+170	450
Bid 4♡	-50	+420	190	-100	+620	240
Bid game if better than		43%			35%	

Not vulnerable, if you pass and are wrong (ten tricks are available), you lose the 420 points you could have had, but still get 170, for a net loss of 250. If you bid game and are wrong (9 tricks), you lose the 140 points you could have had, plus another 50, for a net loss of 190. With 440 points at stake, you expect to do better by bidding game when you estimate that game will make more than 43% of the time (190/440). Vulnerable, it pays to be even more aggressive: bid games that are 35% or better (240/690).

Bid Slam?	Not Vulnerable			Vulnerable		
Tricks available	11	12	Cost of being wrong	11	12	Cost of being wrong
Pass 5♡	+450	+480	500	+650	+680	750
Bid 6♡	-50	+980	530	-100	+1,430	750
Bid slam if better than		51.5%			50%	

Suppose you have a similar decision at the 5-level. Not vulnerable, if you pass and are wrong (twelve tricks are available, and the opponents bid slam), your net loss is 500. If you bid slam and are wrong (11 tricks, and the opponents stop short), your net loss is 530. With 1030 points at stake, you expect to do better by bidding slam when you estimate that slam will make more than 51.5% of the time (530/1030). Vulnerable is about the same: bid slams that are better than 50% (750/1500).

IMPs: These results are possible, using IMP scoring:

Bid Game?	Not Vulnerable			Vulnerable		
Tricks available	9	10	Cost of being wrong	9	10	Cost of being wrong
Pass 3♡	+140	+170	6 IMPs	+140	+170	10 IMPs
Bid 4♡	-50	+420	5 IMPs	-100	+620	6 IMPs
Bid game if better than		45.5%			37.5%	

Not vulnerable, if you pass and are wrong (ten tricks are available, and the opponents bid game), your net loss is 250 (420-170), which is 6 IMPs. If you bid game and are wrong (9 tricks, and the opponents stop short), your net loss is 190, or 5 IMPs. With 11 IMPs at stake, you expect to do better by bidding game when you estimate that game will make more than 45.5% of the time (5/11). Vulnerable, it pays to be even more aggressive: bid games that are 37.5% or better (6/16). If you can judge the difference, it pays to be slightly more conservative at IMPs than at total points.

The rule of thumb for IMPs is to ***bid games that are 50% or better not vulnerable, and 40% or better vulnerable***, chances you are likely to be able to judge. This leaves some leeway – they occasionally double.

Suppose you have a similar decision at the 5-level. See the "Bid Slam" chart for total points: because 500 and 530 point swings are both worth 11 IMPs, you should ***bid your IMPs slams when you think they are better than 50%, at any vulnerability***.

However, if you think there is any chance the opponents will stop short of game, be more conservative, especially if vulnerable. Here's the analysis against opponents who stopped short, perhaps at IMP pairs, getting only 230 or 260 points:

Slam vs. Part Score	Not Vulnerable			Vulnerable		
Tricks available	11	12	Cost of being wrong	11	12	Cost of being wrong
Pass 5♡	+5 IMPs	+5 IMPs	8 IMPs	+9 IMPs	+9 IMPs	6 IMPs
Bid 6♡	-7 IMPs	+13 IMPs	12 IMPs	-8 IMPs	+15 IMPs	17 IMPs
Bid slam if better than		60%			74%	

Sacrificing: Suppose you can make exactly 4♡. The opponents bid 4♠ over your game, and you think they are 50% to make. Bid 5♡, possibly even at unfavorable vulnerability!

Matchpoints: At matchpoints, you generally should bid a game if you think you are more likely than not to make it. Stay out of game, if you think it is more likely to go down. The amount of the score does not matter in such situations, only the frequency of the results.

Matchpoints is complicated game – the example above (bidding game) is one of the few cases where the analysis at matchpoints is simpler than at other scoring methods. In many cases, a cost of being wrong analysis can produce surprising results – as demonstrated by Kit Woolsey in *Matchpoints*, an outstanding book that I have been reading and re-reading for years.

For example, the same 50% rule is true for bidding slams at matchpoints, if you feel everyone will at least get to game. If you think some pairs will stop short of game, you take a greater risk for bidding a slam. Suppose six other pairs are in 3♡ and six are in 4♡, everyone taking the same number of tricks, eleven or twelve.

Bid Slam?	Other tables: 6 part scores, 6 games		
Tricks available	11	12	Cost of being wrong
Pass 5♡	9	9	3
Bid 6♡	0	12	9
Bid slam if better than		75%	

If you stop in 5♡, and make 12 tricks, you have lost 3 matchpoints (half a matchpoint against each pair you tie). It you bid slam and go down, you get a zero, losing all 9 matchpoints you would have received. So, you should be better than 75% sure (9/12) of making this slam to bid it under these conditions.

Rubber Bridge: At rubber bridge, the value of the first game is 350 points – half the way to a 700 point rubber bonus. Therefore, the value of a game at favorable vulnerability is also 350 points, cancelling the value of the opponents' game. When both are vulnerable, a game for either is worth the rubber bonus of 500. It follows that you should be more aggressive both bidding and sacrificing at rubber bridge when both sides are vulnerable.

The value of a part score varies as well at rubber bridge. Not being a rubber bridge player, I'll leave the analysis to the interested reader.

Declaring Contracts

Here's the example repeated from above, with six cards left:

Dummy	*Declarer*
♠ 9	♠ Q
♡ 10 4	♡ A 7 6
◊ A J	◊ 8
♣ 8	♣ 3

Having already taken four tricks, you have five certain tricks and a club loser. Hearts are trump and have been drawn. Your first diamond finesse lost to the ◊K. One opponent has the ◊Q. If you take a second finesse in diamonds and it wins, you can discard a club and take ten tricks. However, if the finesse loses, they may cash a club and hold you to eight tricks.

The defense has been nasty! At many tables, the opponents will fail to attack clubs in time, letting you finesse in diamonds with no additional risk.

The *a priori* (before the fact) chances were 75% that one of these two finesses would win. Once the first finesse loses, the chances of the second finesse are reduced to about 67% - see “Restricted Choice” below.

Total points or IMPs: If the contract is 3♡, play out all your winners, ending in hand, leaving the ♢AJ as the last two cards on dummy, to make life as difficult as possible for the opponents. Watch those discards in case the ♣3 becomes good! If not, lead to the ♢A – don’t risk the contract.

If the contract is 4♡, play the same way, but take the finesse at trick 12. Play all out to make your contract.

Suppose the contract were 2♡, with the same problem: either you make the contract or go down two. Not vulnerable, you should unquestionably finesse.

Vulnerable, you need to consider that down two scores -200, compared to +110 for making. The odds are still good enough to take the finesse, but with any other indication to do so, refuse the finesse.

Matchpoints: In 4♡, you won’t get much of a score for going down. Take the finesse, the odds are with you! At 3♡, you should go with the odds for the maximum number of tricks, and take the finesse.

However, if you want to swing for a good score at 3♡, refuse the finesse. If the finesse is losing, the pairs in game will usually be going down, and the nasty defense will be nullified. However, this is against the odds. I’ll leave the cost of being wrong calculations on this one to the reader – it’s complicated.

Suppose the contract were 2♡, with the same problem: either you make the contract or go down two. Not vulnerable, you should unquestionably finesse; there’s not much difference between -50 and -100.

However, vulnerable, you need to consider that down two scores -200, the fatal result on part score hands. Even though the odds favor the second finesse, it may well be correct to cash out for down 1, to assure a benign -100. These hands are hard to judge; the opponents may have a part score of their own that would be worth more than 100 points.

Restricted Choice

Suppose dummy has AJ10 opposite your small cards. The opposing honors may be divided in four ways:

1. KQ -
2. K Q
3. Q K
4. - KQ

If you finesse (perhaps twice), you will win two tricks in three of the cases, a 75% chance.

Suppose you lead toward dummy and insert the 10, which loses to the K. What is your chance of a second finesse in the suit winning? The intuitive answers are:

- The same, 75%.
- 50%, because it’s a finesse.
- 50%, because cases (1) and (2) have been eliminated, leaving 1 of the remaining 2 cases.

Against best defense, all these answers are *wrong!*

The original problem has the implied assumption that all cases are equally likely – and it’s true. However, once you see the K appear, the remaining two cases are no longer equally likely. In case (4), the opponent could have chosen to play the Q instead of the K. So, the chance that this K was (4), from KQ, is only half the chance of (3), K alone. Therefore, ***the second finesse will win about 67% of the time (2 times out of 3).***

The principle of restricted choice says that an opponent who plays one card among equals was more likely to have no choice in playing that card.

In case (4), best defense is to win the first finesse with an honor chosen at random, which is assumed by the analysis above. Suppose the defender is known to always play the Q when holding KQ. Then the second finesse in our problem will win 100% of the time! However, had this defender won the first finesse with the Q, both remaining cases, (2) and (4), would be equally likely, and the second finesse would be 50%. Since the risks and rewards may not be balanced, declarer gains an advantage when he knows defender's bias.

These cases can be difficult – you may need to look at more presentations before you "get it". See the Restricted Choice and Monty Hall references below – or search the web yourself.

References

1. American Contract Bridge League (ACBL), http://www.acbl.org/.
2. *The Bridge World*, "Bridge Scoring", http://www.bridgeworld.com/default.asp?d=intro_to_bridge&f=bbeg2.html.
3. "Principle of Restricted Choice", http://en.wikipedia.org/wiki/Principle_of_Restricted_Choice.
4. "Monty Hall Problem", http://en.wikipedia.org/wiki/Monty_Hall_problem.
5. Conversations on mitdlbc_discuss@mit.edu, especially the Restricted Choice analysis by Steve Herman.
6. *Matchpoints*, Kit Woolsey, Devyn Press, 1982.